

DOCUMENT RESUME

ED 364 505

SP 034 801

AUTHOR Cahn, Marilyn
TITLE Our Bodies, Our Cells: Children's Activities in Body Systems. Children's Activity Series.
INSTITUTION ETR Associates, Santa Cruz, CA.
REPORT NO ISBN-1-56071-087-X
PUB DATE 93
NOTE 71p.; For related documents, see SP 034 802-803. Illustrated by Eric Berg.
AVAILABLE FROM ETR Associates, P.O. Box 1830, Santa Cruz, CA 95061-1830 (Title No. 565: \$12.95).
PUB TYPE Guides - Classroom Use - Teaching Guides (For Teacher) (052)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Cardiovascular System; Child Health; Class Activities; Elementary School Students; *Health Education; *Human Body; Hygiene; Instructional Materials; Integrated Curriculum; *Learning Activities; Muscular System; Physical Fitness; Primary Education; Skeletal System; Teaching Guides
IDENTIFIERS Age Appropriateness; *Body Awareness; Cells (Biology); Digestive System

ABSTRACT

The supplemental teaching resources provided in this book offer a variety of concrete, visual activities designed to help classroom and daycare center teachers introduce children to the human body and the way it is organized. An analogy comparing human body parts to house parts is used throughout the book to make lessons clear and age-appropriate. Reproducible masters for student activity sheets and teacher patterns are found at the end of each lesson, along with suggestions for integrating lessons into art, science, math, and other areas of the primary curriculum. Through crafts, puppetry, and projects, children learn basic facts about the systems of the body, laying the foundation for future lessons in health and hygiene. The book is organized according to eight concepts: the first explores the components of the body and the parts of a house; the second concept deals with the smallest element of the body, the cell; the third concept teaches about various body parts; the fourth and fifth concepts examine how muscles (including the heart muscle) work; the sixth concept explains the different parts (organs) involved in digestion; the seventh encourages children to demonstrate their knowledge of the digestive organs; and the eighth suggests ways to keep the body and all its cells healthy. (LL)

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Our Bodies, Our Cells

Children's Activities in Body Systems

Marilyn Cahn

Illustrated by Eric Berg

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ETR Associates
Santa Cruz, California
1993

About ETR Associates

ETR Associates (Education, Training and Research) is a nonprofit organization committed to fostering the health, well-being and cultural diversity of individuals, families, schools and communities. The publishing program of ETR Associates provides books and materials that empower young people and adults with the skills to make positive health choices. We invite health professionals to learn more about our high-quality publishing, training and research programs by contacting us at P.O. Box 1830, Santa Cruz, CA 95061-1830.

About the Author

Marilyn Cahn, a graduate of Mills College, has been teaching in kindergarten through eighth grade for more than twenty years. She has created science and computer curricula for the Soquel Elementary School District in Soquel, California, and has developed and taught family life and AIDS curricula at the high school level in Santa Cruz County, California.

About the Activity Series

This is just one of many titles in the creative **Children's Activity Series** from ETR Associates. Each fun-filled activity book has a companion poster, available in bulk quantities, to reinforce its important health message. Color them in! Hang them up! Send them home! These resource books and posters are designed to help you build students' health skills in school and at home! For more information and a free catalog, call toll-free 1-800-321-4407.

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Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

Design: Ann Smiley

Title No. 565

Library of Congress Cataloging-in-Publication Data

Cahn, Marilyn.

Our bodies, our cells : children's activities in body systems /
Marilyn Cahn ; illustrated by Eric Berg.

p. cm. — (Children's activity series)

ISBN 1-56071-087-X

1. Human anatomy—Study and teaching (Elementary)
2. Human anatomy—Study and teaching (Preschool)
3. Cytology—Study and teaching (Elementary) 4. Cytology—
Study and teaching (Preschool) 5. Early childhood education—
Activity programs. I. Title. II. Series.

QM30.C34 1993

612—dc20

92-15985

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Series Introduction

The **Children's Activity Series** promotes awareness about health, family life and cultural diversity for children in kindergarten through third grade. Each book focuses on a topic that can be difficult for elementary school teachers to address. Activities have been specifically designed to help children grow into adults who:

- feel good about themselves;
- interact with others;
- choose a healthful lifestyle;
- avoid tobacco, alcohol and other drugs;
- are open to the diversity of our world and its cultures; and
- contribute in a responsible way to society.

The books in this series are written to enhance an established curriculum, rather than to serve as the curriculum. They offer ideas for hands-on activities for teachers to integrate into the primary-level curriculum. Teachers can use the various interactive and lively activities as-is or adapt them to meet the needs of their specific situations.

The format of each activity is designed to help teachers easily prepare for the busy hands-on work. The **Get Ready, Get Set...** section outlines any advance preparation needed to conduct the activity. All items for student use are clearly identified in the **Materials for Children** section. The steps for the process of the activity are detailed in the **Here We Go!** section. Reproducible masters for student activity sheets and teacher patterns are found at the end of the activity.



The books in the **Children's Activity Series** are developed by authors familiar with both the content and process appropriate for primary school students in specific topic areas. And most importantly, the activities have been tested with children and have proven to be both educational and FUN.

Author's Introduction

The human body is an interesting and mysterious subject for all of us. Young children take a special interest in discovering facts about their bodies.

The activities in this book are designed to help primary grade children learn about the human body and how it is organized. Children learn more effectively when they are directly involved in the learning process, so the activities in this book fully involve them.

I have used the theme of comparing the human body to a house throughout this book. In the first concept, children explore the components of the body and a house to establish the analogy between house and body.

The next concept deals with the smallest element of the body, the cell. Children work in activity groups to explore the function of different types of cells by looking at parts of a house with similar functions. This activity establishes the foundation for understanding how systems of like cells, or organs, work.



Children learn about a number of body systems in Concept 3. The later concepts focus on two systems—muscles and digestion—in more depth. In Concepts 4 and 5, children learn how voluntary and involuntary muscles work. Demonstrations and other activities illustrate the digestive process in Concepts 6 and 7.

Hands-on activities are an important part of the learning process for primary grade children. Children build body systems, exercise to investigate how muscles work, make a stethoscope to listen to the heart muscle, and create puppet plays about digestion. For the final concept, children make a mural to illustrate what they've learned about taking care of the body's cells and organs.

The activities help children learn how to care for their bodies and keep their bodies healthy. I encourage you to include the school nurse or another health professional in your planning for these activities.

I hope these activities help children appreciate the human body and its remarkable work. I hope that you as a teacher find the activities useful and exciting and that you enjoy using them with the children you teach.

Marilyn Cahn

I Building a Body

Purpose

To help children see that our bodies are put together in a very special way.

In a Nutshell

As children brainstorm various parts of a house, pictures of the pieces are put into a box that represents a house. The procedure is repeated for the body. Children then draw pictures of different kinds of houses and bodies.

Get Ready, Get Set...

- Gather needed materials: two cardboard boxes (about the size of shoeboxes), paper of various colors (some for house paint and some for skin tone), glue.
- Cut colored paper to represent curly and straight hair.
- Prepare **House Parts** and **Body Parts**. See teacher pages.
- Make a slot in the top of each box big enough for the parts to fit through.
- Gather materials for children.

Materials for Children

- ★ drawing paper
- ★ crayons



Here We Go!

1. Show children one box. Tell them you are going to turn the box into a house. Ask children to suggest some colors for the house. Glue a different color paper on each side of the box. Point out that houses can be different colors.

Ask children what other parts a house has (besides walls). As children list the parts that you have prepared from the **House Parts** teacher page, hand them the parts they name. Have them put the **House Parts** in or on the box. *Optional:* Have children color the parts before they put them on or in the box.

If children suggest an item that's not included on the **House Parts** page, write the name of the item on a piece of paper or make a quick sketch of it. If children don't mention plumbing and electricity, suggest that these items also belong in the box.

2. Show children the second box. Tell them this box will be the human body. Ask children what color the skin should be. Put different color paper on each side of the box. Point out that people have many different skin colors. Add both curly and straight hair.

Ask children to think of all the different parts of the body. As children name body parts, give them the

Body Parts to put in or on the box. Encourage children to think of inside body parts (internal organs).

3. Have children look at the house and the body.



Shake the boxes. Do they look like a house and a body? Why or why not? Discuss how houses can be different. (Houses can have different colors of paint. They can be different sizes and styles.) How can people be different? (People are different sizes, shapes and colors.)



4. Explain that making a house or a body isn't as easy as just putting things into a box. Tell children that the person who designs the house knows where everything should go and how it should work.

Tell children the human body has a special design, too. Everything is put in a special place and has a special job to do. People look different, but we all have the same body parts and they do the same work in everyone. Tell children they're going to learn more about how the body is put together and how some body parts work.

5. Pass out drawing paper and crayons. Tell children to fold the paper in half. Tell them to draw three or four different types of houses on one half. Tell them to decorate and color each house differently.

Tell children to draw different sizes and shapes of people on the other half of the paper. Tell them to color the people and their clothes differently, too.

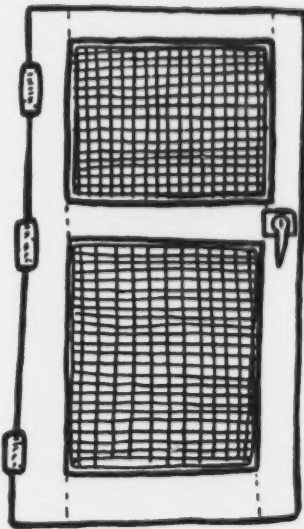
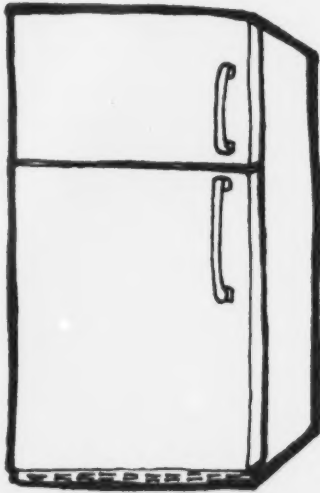
New Words

esophagus, intestines, liver, lungs, muscles, stomach,
trachea

Where It Fits

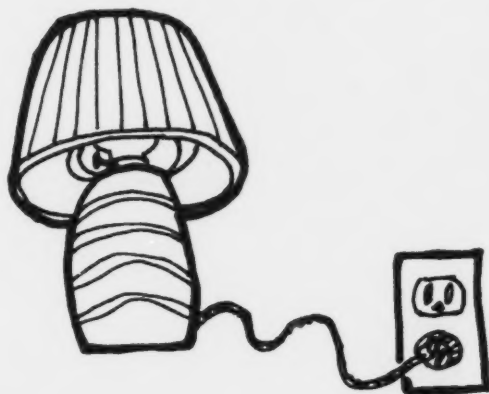
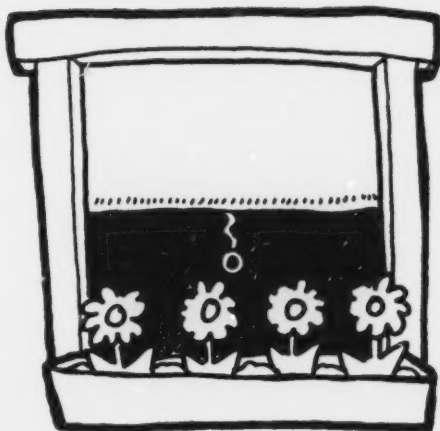
art, health, science, social studies

House Parts

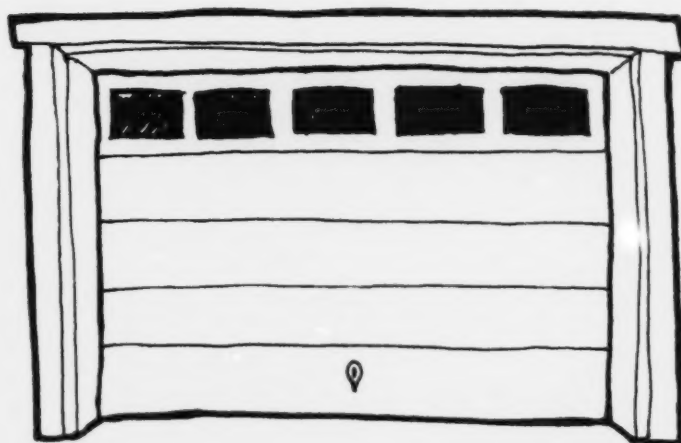
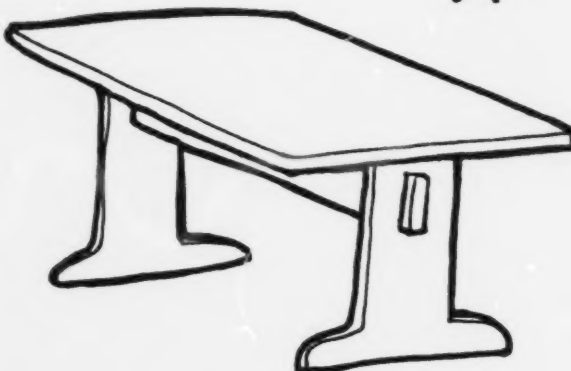


Directions: Cut out the various parts of a house. You may want to color the pieces and/or mount them on tagboard. Or let children color the pieces in class.

House Parts



House Parts

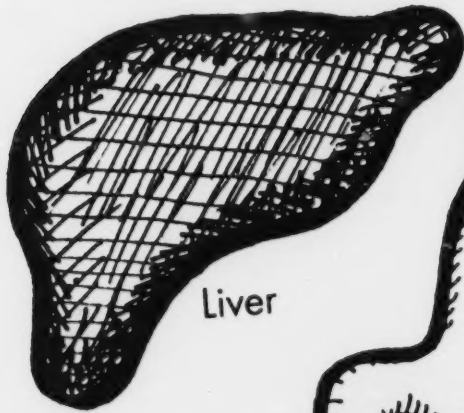


Body Parts

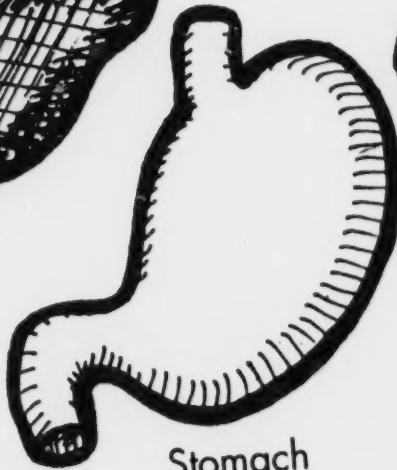


Directions: Cut out the various body parts. You may want to color the pieces and/or mount them on tagboard. Or let children color the pieces in class.

Body Parts



Liver



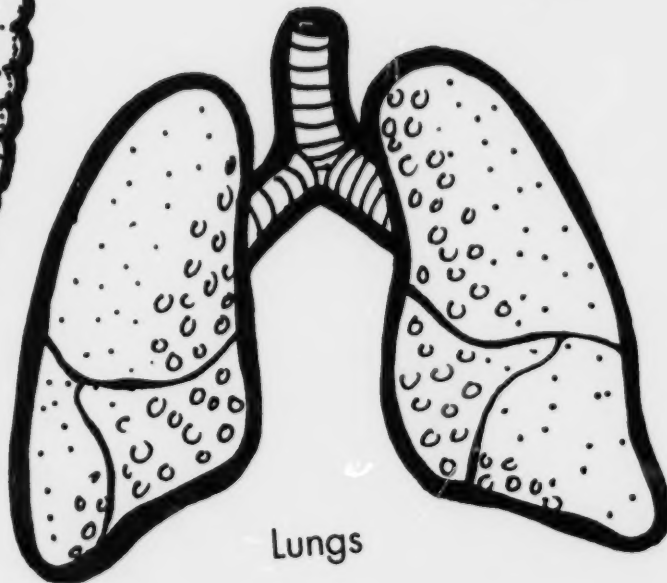
Stomach



Bone

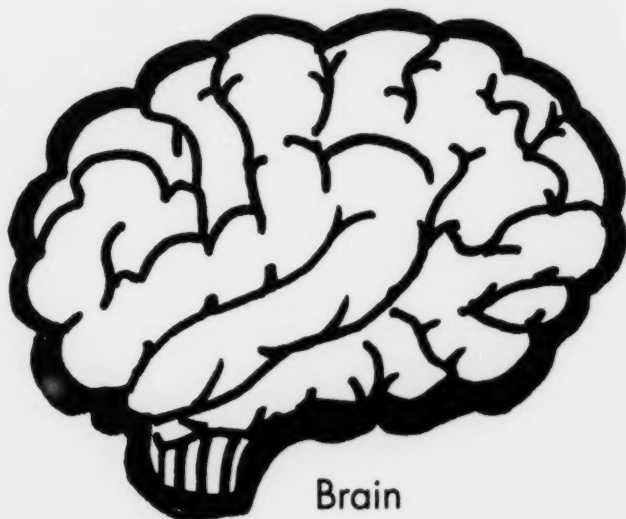


Intestines



Lungs

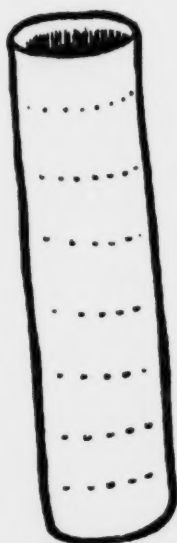
Body Parts



Brain



Trachea



Esophagus



Heart

2 The Smallest Part

Purpose

To help children understand that the cell is the smallest part of the body and that all parts of the body are made of cells.

In a Nutshell

Children name the smallest things used to build a house and try to name the smallest part of the body. They look at a picture of a cell and use microscopes to examine skin cells. They then work at activity centers to label the parts of different cells on a set of activity sheets.

Get Ready, Get Set...

- Gather needed materials: microscopes, slides and slide covers, toothpicks, iodine.
- Make transparency or poster of **Cell** activity sheet.
- Prepare six activity centers. Set up one center with microscopes and drawing paper. Set up one center for each of the following activity sheets: **Nerve Cell, Skin Cells, Bone Cells, Muscle Cells, Fat Cells**.
- Copy activity sheets for each child.
- Place the activity sheets at the appropriate centers.
- Review **Cells** teacher page.
- Prepare word cards using *New Words*.

Materials for Children

- | | |
|-----------------------------|-------------------------------|
| ★ Cell activity sheet | ★ Muscle Cells activity sheet |
| ★ Nerve Cell activity sheet | ★ Fat Cells activity sheet |
| ★ Skin Cells activity sheet | |
| ★ Bone Cells activity sheet | |

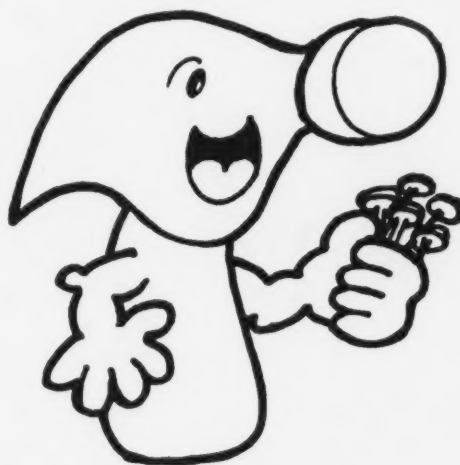


Here We Go!

1. Ask children to name the smallest thing a builder uses to build a house (little nails, screws). Point out that even though these are very small, they can be seen.

Now ask what the smallest thing in the body is. If no one knows, tell children the cell is the smallest thing in the body. Tell them that a cell is so small it can only be seen with the help of a microscope.

Explain that every part of the body is made up of cells. Our skin, muscles, blood, nerves and bones are all made of cells.



2. Pass out the **Cell** activity sheet. Show children the **Cell** transparency or poster. Tell them the picture shows the different parts of a cell. Have children label the parts of the cell on their activity sheets as you label them on the transparency or poster.

Label the *cell membrane*, which surrounds the cell. Tell children the cell membrane lets food and oxygen pass into the cell, and it lets waste matter pass out of the cell. The cell membrane also keeps out things that might harm the cell.

Label the *cytoplasm*, the liquid inside the cell. Label the *nucleus* at the center of the cell. Tell children the nucleus controls what a cell does.

Explain that all animal cells have these same parts. Add that different cells do different things, even though they have the same parts.

3. Gently scrape the inside of your cheek with the blunt end of a toothpick a few times. Spread the scraping on a microscope slide. Add a drop of water and a drop of iodine and cover with a slide cover. Tell children that when they look through the microscope, they can see cells. Set up as many microscopes as you can. *Optional:* Help some children take samples of their own cheek cells to examine.



4. Divide the class into activity groups that will rotate in five- to ten-minute time slots. At the microscope activity center, have children draw one of the cells they see in the microscope, then label the cell parts. Post the word cards for *cell membrane*, *cytoplasm* and *nucleus* where children can easily see them to copy the terms. At each of the other activity centers, have children fill in the lines to label the parts of the cell on the activity sheet at that center. Tell them to try to decide as a group what function the cell might have. Tell them to look at the picture of a house part for a hint.

5. Have children share their ideas with the class. Then discuss each of the cell activity sheets. Explain that skin cells put together make our skin, which is like the paint on a house. Bone cells make bones, and the bones are our frame.



Muscle cells make muscles, which help our body move, like the spring on a screen door. Fat cells make the fat in our bodies that helps us stay warm, just as insulation in a house helps keep it warm. Nerve cells make up our nervous system, which controls the information that goes to all parts of the body.

Explain that although our body seems to be one whole thing, it actually is made of trillions of cells. These cells come together to make the body parts we can see.

All of these cells do very important things for the body. In the next few lessons, we will learn more about how these cells work together to make a body.

New Words

cell, cell membrane, cytoplasm, microscope, nucleus

Where It Fits

health, science

Cells

Our body is made of trillions of cells. All animal cells have the following parts:

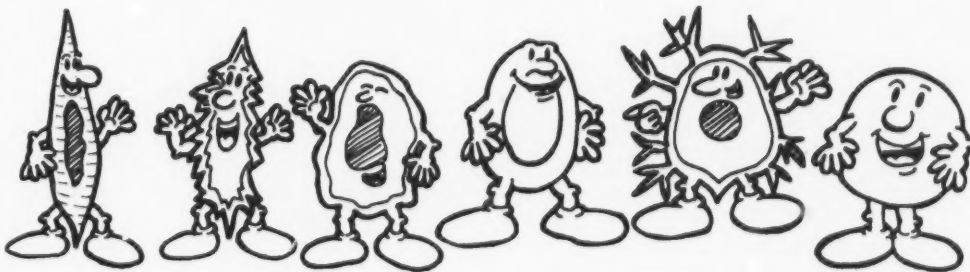
Cell membrane—a thin covering surrounding the cell. It forms a wall that holds the cell together. It lets needed chemicals into the cell and releases waste material.

Cytoplasm—usually a jellylike material that surrounds the nucleus.

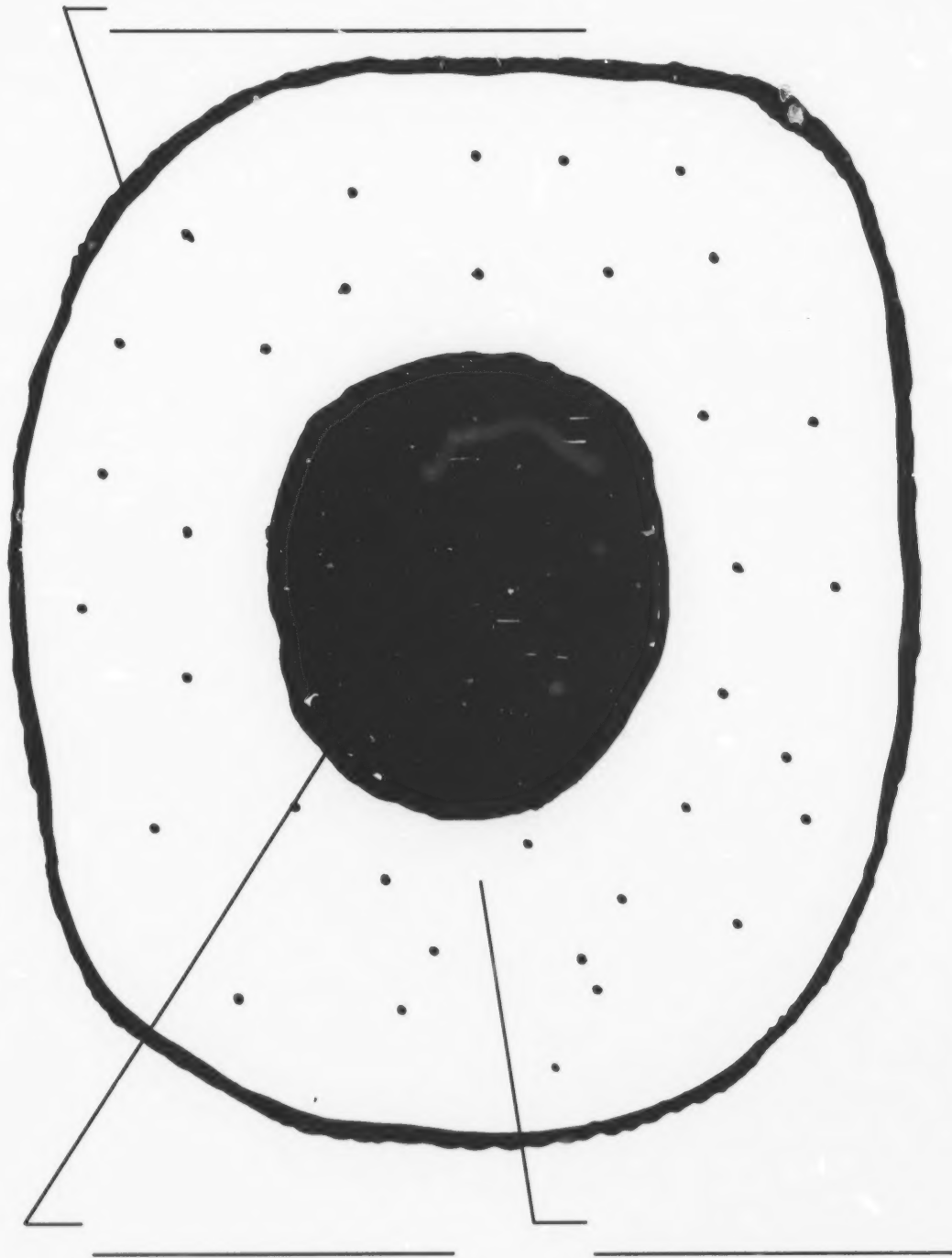
Nucleus—directs the cell's activity. It also helps the cell reproduce itself.

Although all cells have the same parts, they are not all alike. Cells differ in size and shape, and they have special work to do. The differences make it possible for each type of cell to carry on its special kind of activity. All parts of our body are made of cells: blood, skin, bone, muscle, nerve, hair.

A group of cells that carry on the same work is called a tissue, such as muscle tissue. Organs, such as the heart, are made up of tissues. A body system, such as the circulatory system, is made up of a group of organs—heart, blood vessels, etc.

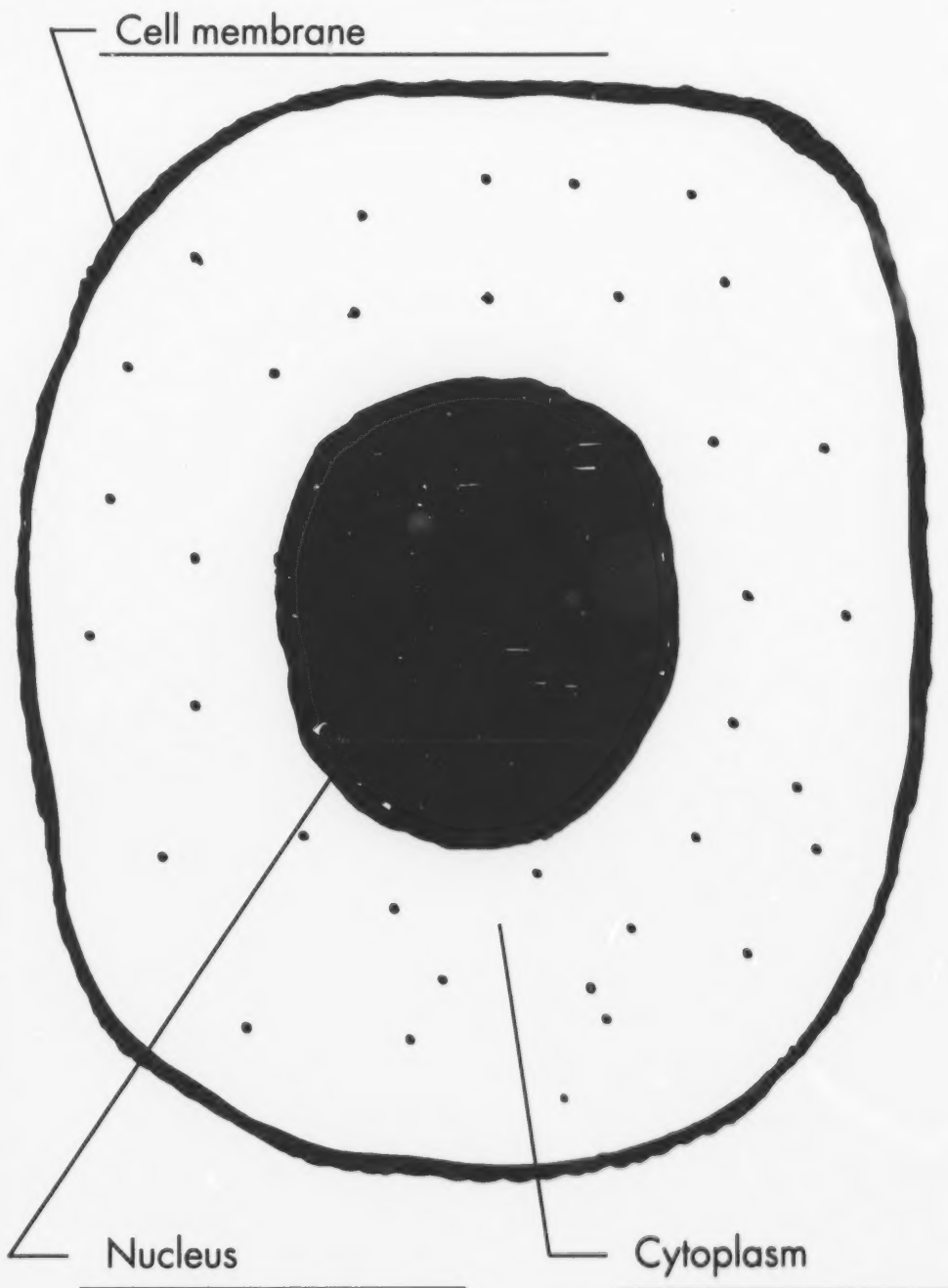


Cell

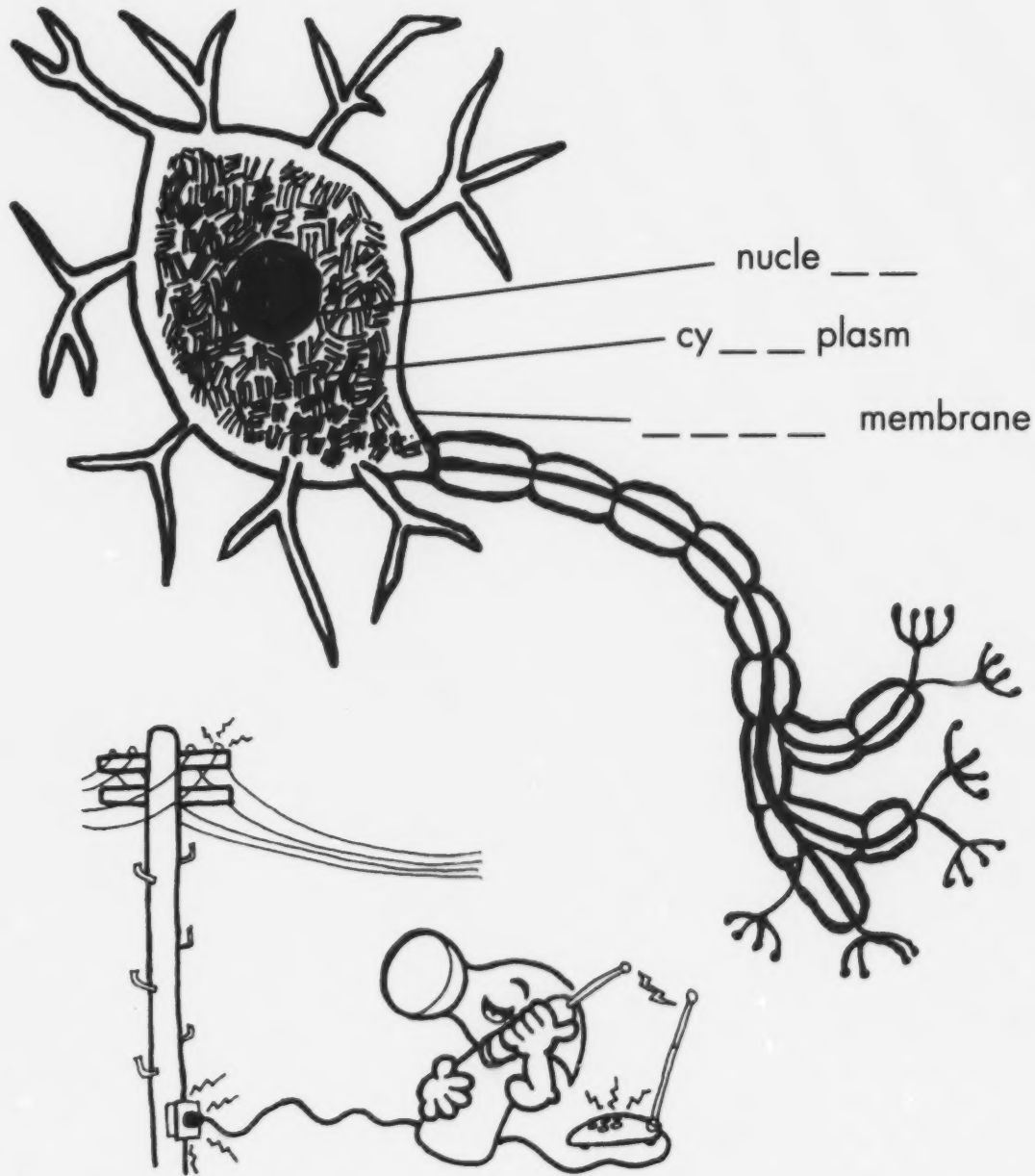


Cell

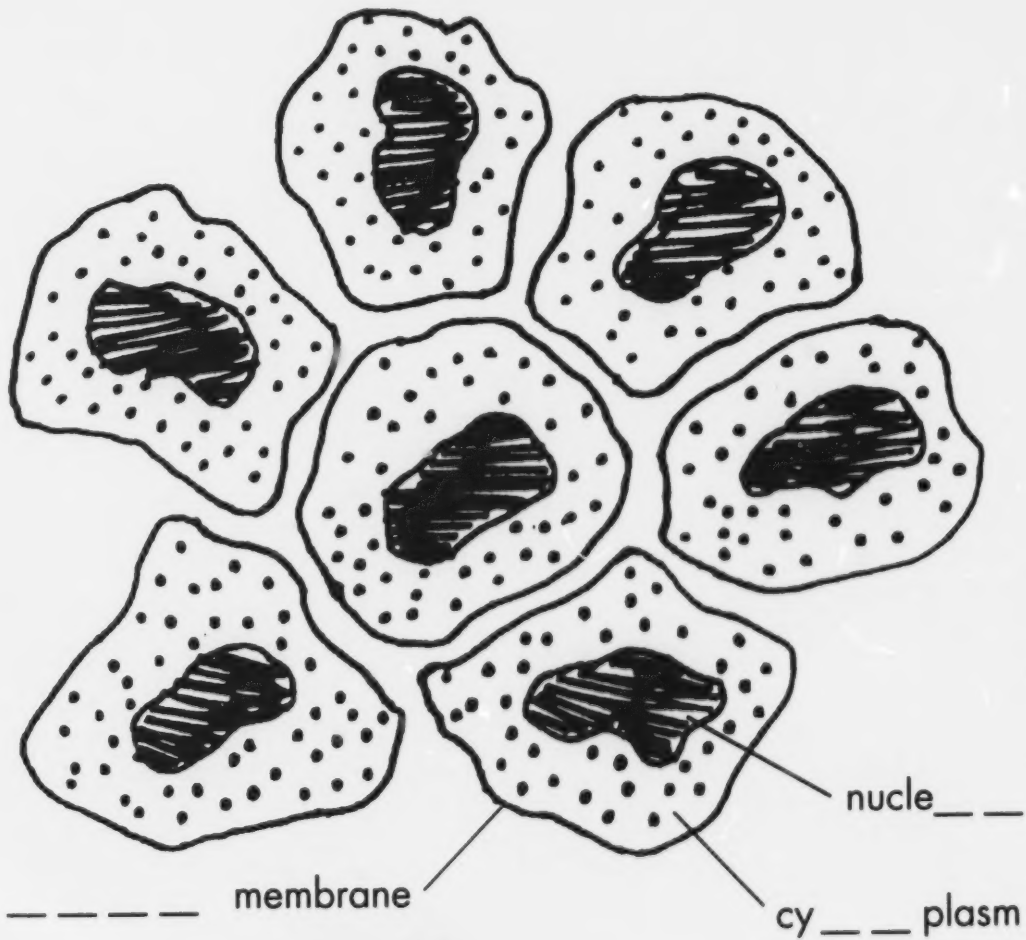
Example



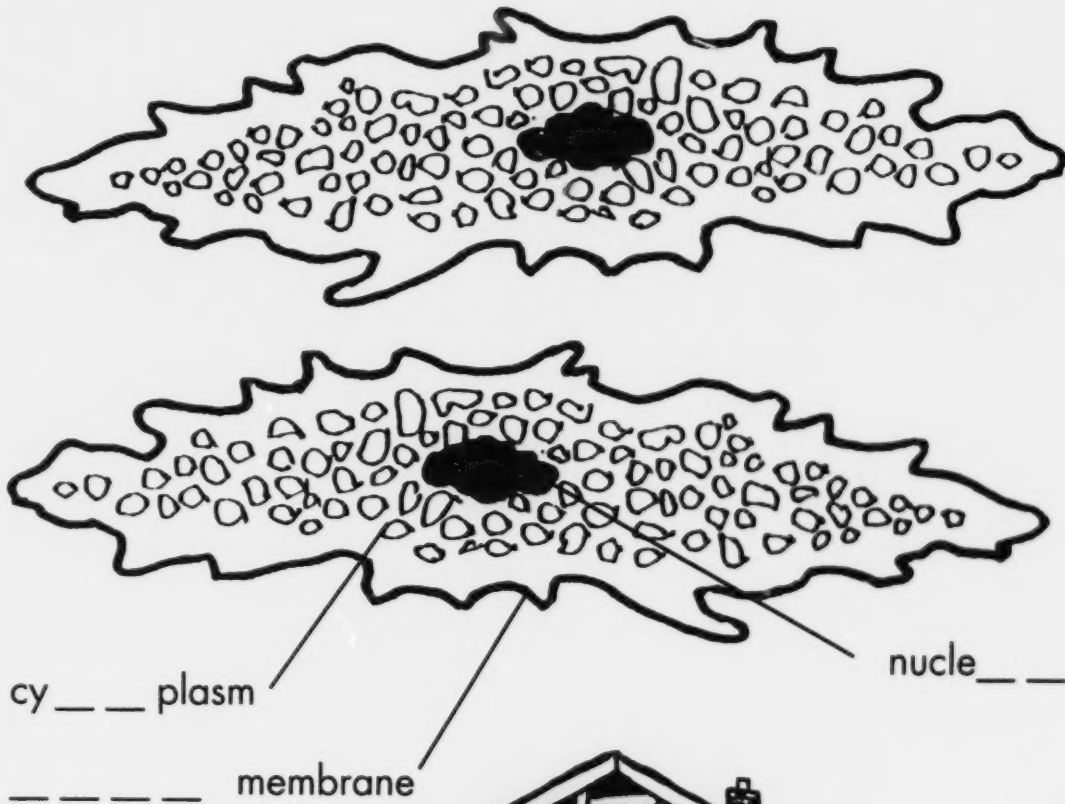
Nerve Cell



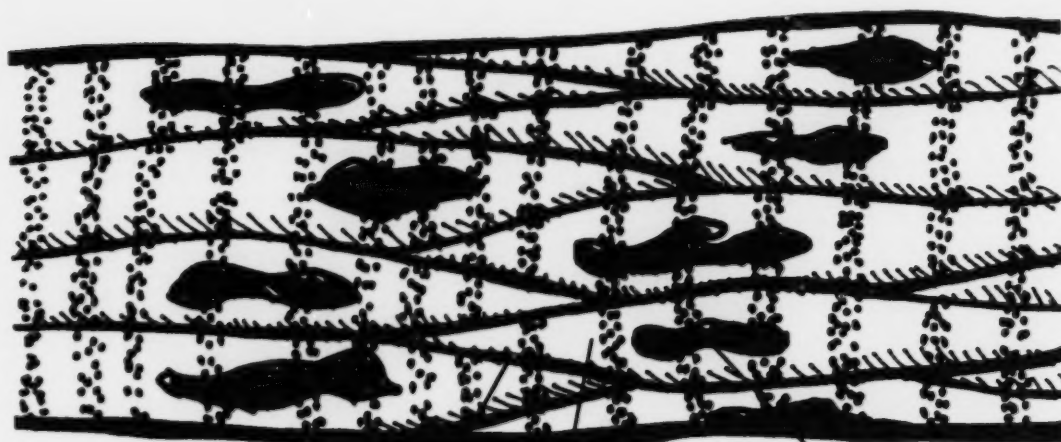
Skin Cells



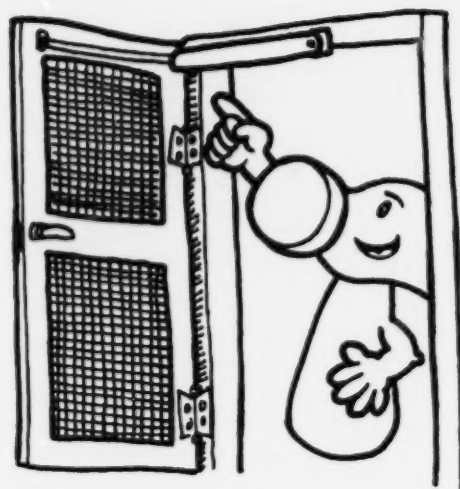
Bone Cells



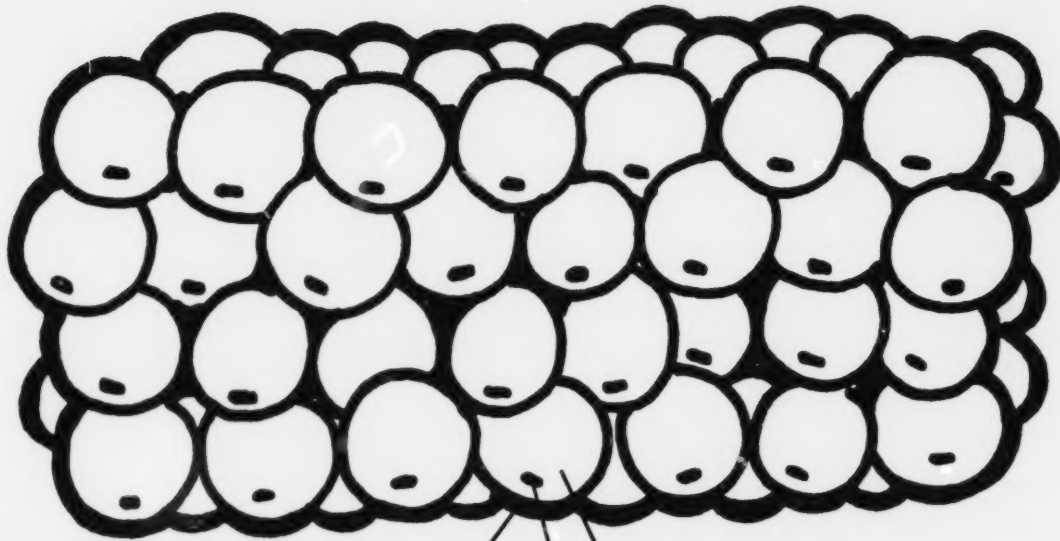
Muscle Cells



_____ membrane cytoplasm nucleus _____



Fat Cells



membrane

cy ____ plasm

nucle ____



3

What Makes What

Purpose

To teach children about various body parts.

In a Nutshell

Children illustrate some of the systems of a house by gluing pictures and objects on an activity sheet. They then do the same with body parts and systems.

Get Ready, Get Set...

- Gather materials for children and copy activity sheets for each child.

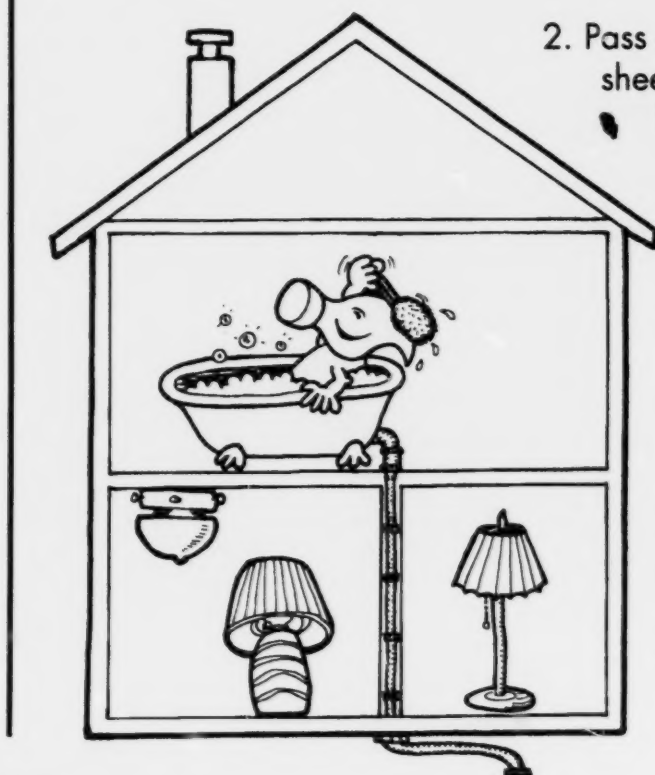
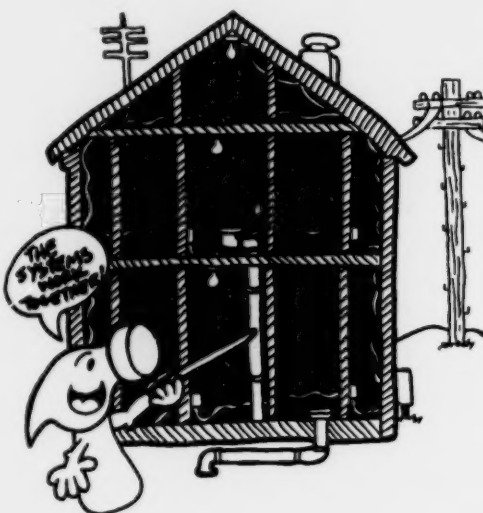
Materials for Children

- ★ House activity sheet
- ★ toothpicks, about 30 for each child
- ★ glue
- ★ How a House Works activity sheet
- ★ string, 3 or 4 pieces (1–2 in. long) for each child
- ★ How a Body Works activity sheet
- ★ crayons
- ★ red licorice strings, 5 pieces, (4–6 in. long) for each child
- ★ elbow macaroni, one piece for each child
- ★ dried lima beans, two for each child

Here We Go!

1. Tell children that both houses and bodies include various systems, different parts that work together to do a job. Explain that each system has its own job, but all the systems work together to keep our bodies or our houses working properly.

Ask children to name some of the systems that go into a house. Encourage them to think of the internal systems, e.g., electrical wiring, plumbing, heating.



2. Pass out the **House** activity sheet. Ask children if they know what the frame of a house is. Explain that the frame is the boards that go inside the walls of a house. Relate it to building a house with blocks.

Have children glue toothpicks on the activity sheet to show the frame of the house. Tell them to use the toothpicks to make different floors and rooms in the house. Ask children what the frame does (holds the house up).

3. Pass out the **How a House Works** activity sheet. Tell children to cut out different lights to glue on their houses. Tell them they can put the lights wherever they want.

Pass out pieces of string. Tell children to glue string to the picture to show how the wiring goes from the lights through the walls.

Tell children to cut out and glue the plumbing fixture (bathtub) to the house. Tell them to be sure the pipe connects to the drain pipe in the center wall. Explain that wiring and plumbing are some of the systems in a house that make it work. The pipes and wires are inside the walls.

4. Tell children the body also has parts that work together to do different jobs. Ask what body part is like the frame of a house (the skeleton). Ask children what makes the skeleton (bones). Explain that the skeleton is made of bone cells. Ask children what the skeleton does (supports the body and protects other body parts).



Tell children that muscle cells make muscles. Explain that muscles work together to do an important job. Ask children what job muscles do for the body (help the body move).

Tell children that the lungs and the windpipe work together to make the body breathe, bringing clean air (oxygen) to the cells. Explain that these body parts are also made of cells. Tell them the nose and mouth work with the lungs and windpipe.

Ask children what the stomach does (helps the body make use of the food we eat). Tell them that another body part, the intestines, also helps the body use (digest) food.

Tell children that blood moves through the body in blood vessels, which are similar to the pipes (plumbing) that move water around a house. Remind them that blood is made of blood cells.

Tell children that nerves are another important body part. Explain that nerves control the way the body moves and help send messages to all parts of the body. Ask children which house part nerves are like (telephone).

5. Pass out the **How a Body Works** activity sheet. Tell children to glue toothpicks on the lines inside the body to show the skeleton.

Have them draw a heart on the chest. Tell them the heart is like a pump. It helps move blood through the body.

Pass out licorice strings. Tell children to glue the licorice strings next to the toothpicks to represent the blood vessels, the pipes that carry blood through the body.

Have children draw a mouth and a nose on the face. Give each child a piece of macaroni. Show children where to glue the piece of macaroni for the windpipe. Pass out the lima beans, two for



each child, and show children where to glue the beans for lungs.

Review the body parts children have indicated on the activity sheet: heart, skeleton (toothpicks), blood vessels (licorice), windpipe and lungs (macaroni and lima beans). Remind children that all these parts are made up of tiny cells.

Explain that they did not put on all of the body parts. Tell children they will be learning more about some of the body parts in other lessons.

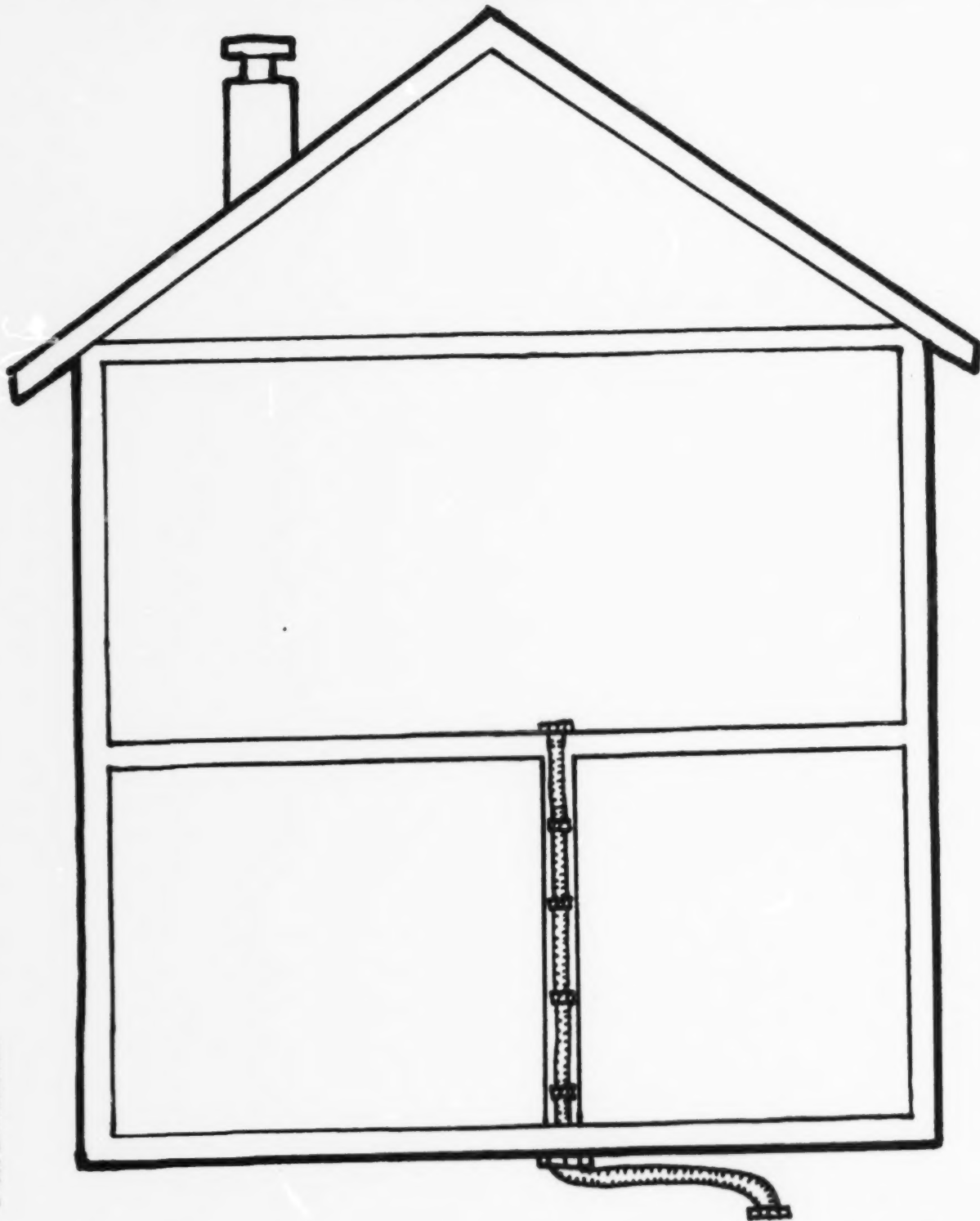
New Words

blood vessels, nerves, skeleton, windpipe

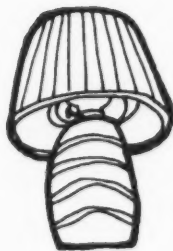
Where It Fits

art, health, science

House

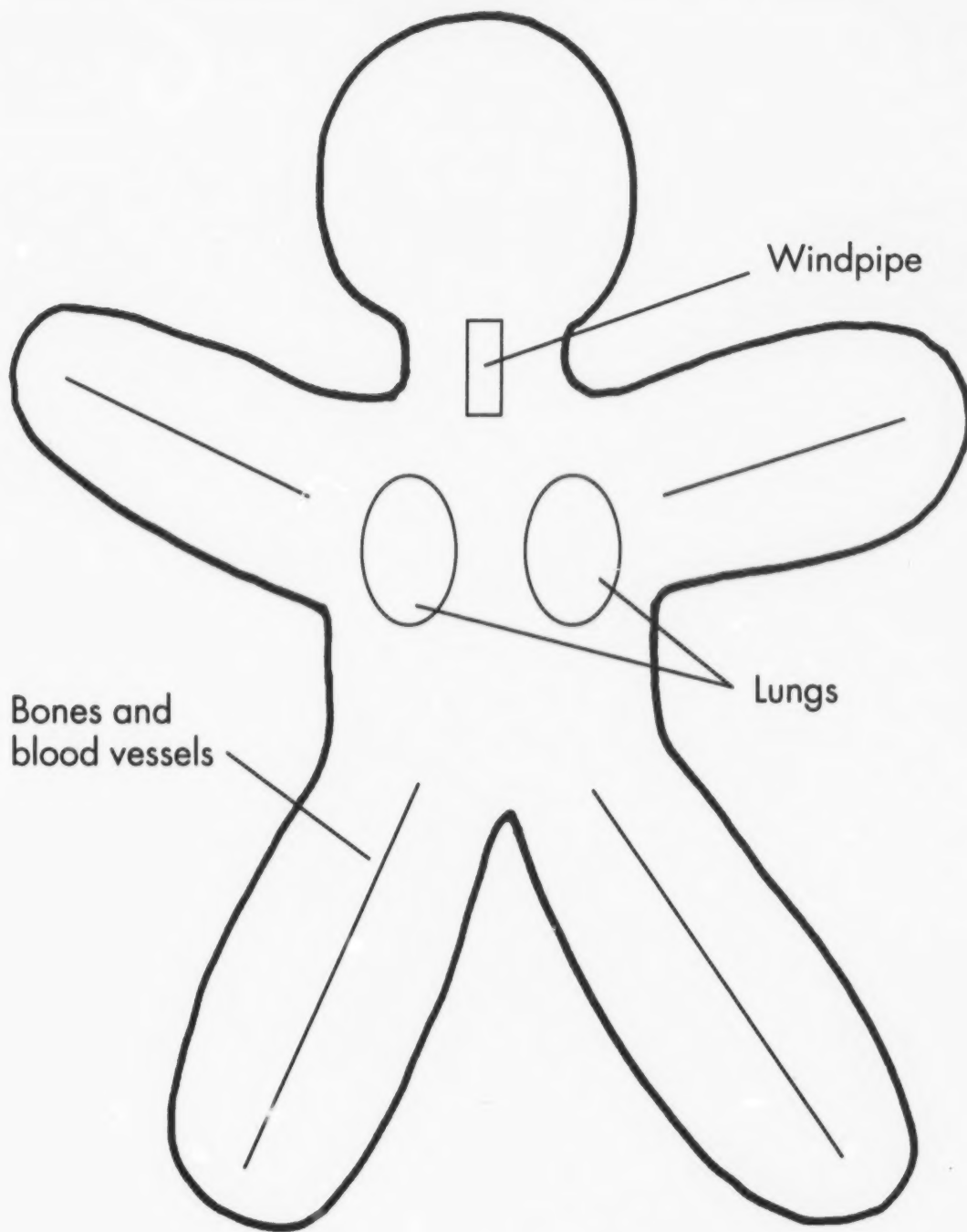


How a House Works



How a Body Works

.....



4

How Muscles Work

Purpose

To help children learn how muscles work.

In a Nutshell

Children feel their arm muscles contracting and relaxing and identify the muscles they are using. Children arm wrestle (or finger wrestle) and try to identify which muscles contract. They then draw pictures of some activities that use voluntary muscles.

Get Ready, Get Set...

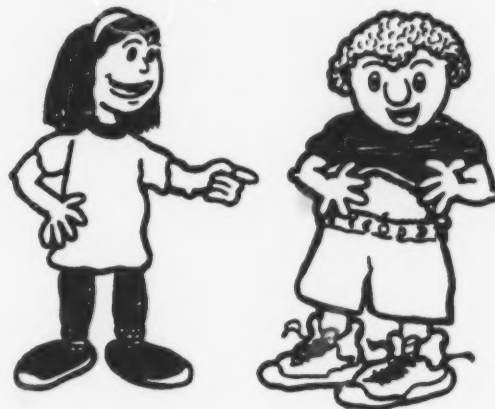
- Make transparency or poster of **Screen Door**.
- Obtain a chart of the muscular system (optional).
- Gather materials for children and copy activity sheet for each child.
- Review **The Muscular System** teacher page.

Materials for Children

- ★ Moving Muscles activity sheet
- ★ drawing paper
- ★ crayons

Here We Go!

1. Tell children that they are going to find out how their muscles work. Ask children to brainstorm places in their body where they have muscles. List their responses on the board.



2. Show children the **Screen Door** transparency or poster. Point out the automatic spring. Ask children how it works. Help them understand that the spring is attached to the door to pull it closed after it's opened.

Explain that our muscles are connected to our bones, and they help us to move up and down or side to side. Show children the chart of the muscular system (optional). Remind children that muscles are made of muscle cells.

3. Have children place the palm of one hand on the bottom of their desks. Tell them to feel the muscles in their upper arms with their other hands. Tell them that their arms should be relaxed.

Now have children push up on the desk. Tell them to feel the muscles in the upper arm as they push. Explain that they have two muscles in the upper arm—one in front and one in back. Ask which muscle contracts, gets shorter or tighter (the one in front).

Now have children place the palm of one hand on the top of their desks. Tell them to feel the muscles in their upper arm again. Now have them push down on the desk. Which muscle contracts this time, the one in front or the one in back? (the one in back)

4. Explain that, just like the screen door spring, muscles can only pull. When a muscle is pulling, it is contracting. When the pulling stops, the muscle is relaxed.

Explain that the children are making their muscles move. Muscles that we can move are called voluntary muscles. Have children think of other places in the body that have voluntary muscles (fingers, legs, toes, neck).

5. Have children arm or finger wrestle. Ask them if they can figure out which muscles contract when they wrestle (arms, fingers). Can they figure out a way to get their leg muscles to contract and relax? (walk, ride a bicycle, stand up, sit down)
6. Have children brainstorm activities that use voluntary muscles (walking, running, waving your hand, writing, nodding your head). Pass out the **Moving Muscles** activity sheet. Let children make drawings of some of these activities.



New Words

contract, relax, voluntary muscle

Where It Fits

art, health, science

The Muscular System

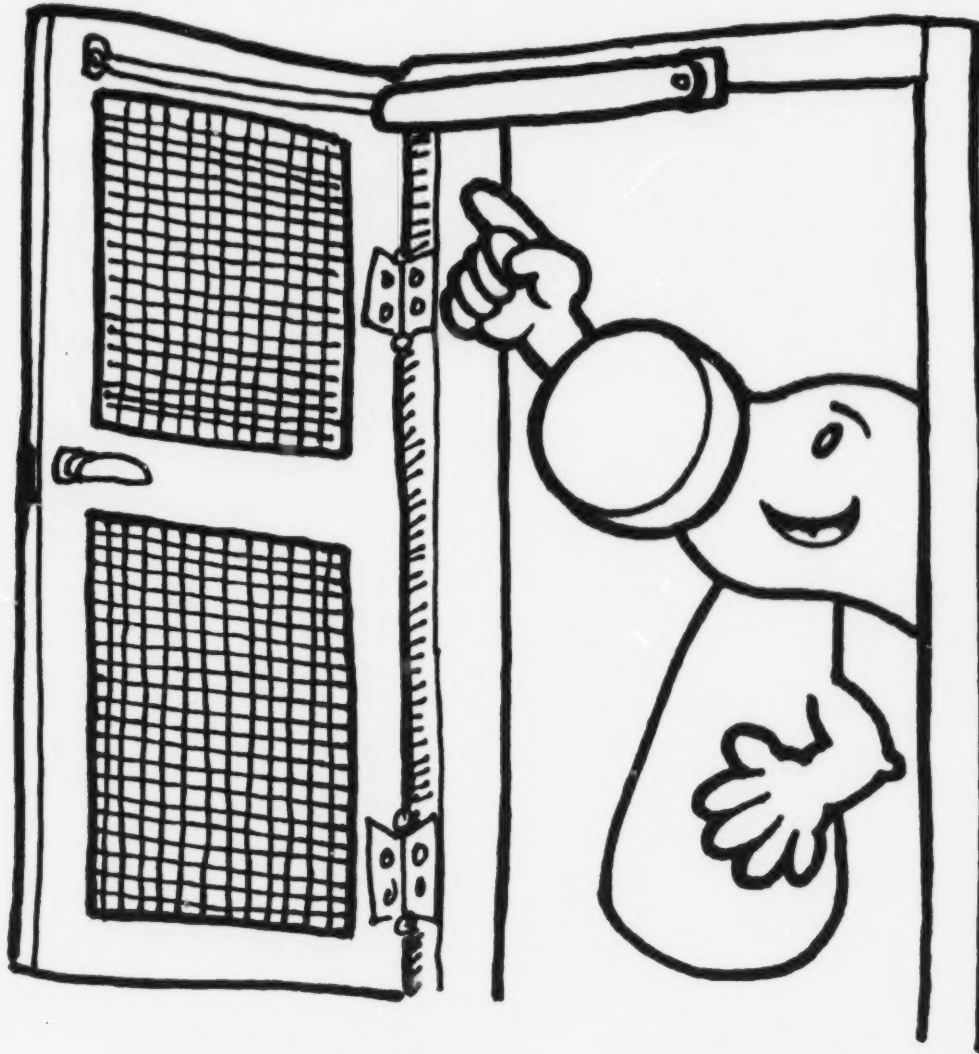
The purpose of the muscular system is to cause movement. Every movement the body makes is done by muscles.

There are two types of muscles: voluntary and involuntary. Voluntary muscles are muscles that we can control (like the muscles that move the hands, arms, fingers and toes). These muscles move whenever we want them to move. Involuntary muscles are muscles that we cannot control (heart, stomach).

Some muscles are both voluntary and involuntary. They usually operate without our control, but we can also control them (eyelids, diaphragm).



Screen Door



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Moving Muscles

Draw an activity that shows you moving your muscles.



5 The Most Important Muscle

Purpose

To help children understand how the heart muscle works.

In a Nutshell

Children make stethoscopes and listen to each other's heartbeats. They work in pairs to check each other's heart rates after doing some simple exercises. They then make a bar graph showing their heart rates after each activity.

Get Ready, Get Set...

- Gather needed materials: stop watch.
- Invite the school nurse to speak to the class. If no nurse is available, try to borrow a stethoscope.
- Make transparency or poster of **Where Is Your Heart?**
- Make transparency or poster of **Heart Rate Example.**
- Gather materials for children and copy activity sheet for each child.

Materials for Children

- ★ 6-in. length of cardboard tubing (toilet paper tube, giftwrap tube), one for each child
- ★ construction paper
- ★ crayons
- ★ scissors
- ★ glue
- ★ Heart Rate activity sheet

Here We Go!

1. Review voluntary muscles and how they work. Explain that not all muscles are voluntary. Tell children some muscles work without people doing anything. These muscles are called involuntary muscles. For example: When you sleep, your heart muscle will keep working. The muscles in your stomach contract and relax when you have food in your stomach. Your lungs keep breathing even while you are asleep.



2. If a school nurse is available, have her or him explain how a stethoscope is used. Tell children that doctors use the stethoscope to listen to a person's heart. They listen to the sounds the heart makes. Doctors can hear two sounds that they call "lub-dub." These are the sounds the heart valves make as they snap open and shut.

Ask children what they know about how the heart works. Explain that the heart is an involuntary muscle. It sends blood to all parts of the body, delivering oxygen and nutrients to all the body's trillions of cells. The heart circulates the body's blood more than 1,000 times per day. Your heart is the same size as your fist.

3. Show children the **Where Is Your Heart?** transparency or poster, which shows where the heart is located. Have children try to locate their hearts. Tell them not to worry if they can't locate the heart, because they will have a chance to listen to each other's heartbeats with a stethoscope.

Pass out the paper tubes and art supplies. Have children make their own stethoscopes by decorating the paper tubes. Let children use the real stethoscope to listen to each other's hearts during this activity.

4. Divide the class into pairs. Tell children to use their stethoscopes to listen to each other's heartbeats. Be sure the classroom is quiet. Explain that this stethoscope will not carry sounds as well as the doctor's stethoscope. Have children try to count how many heartbeats they hear in ten seconds.
5. Pass out the **Heart Rate** activity sheet. Tell children to write the number of heartbeats their partners counted on the line next to the word *sitting*. Have children take turns doing two or three of the exercises on the sheet for about 30 seconds while you time them.

After each exercise, have partners use their stethoscopes to count each other's heartbeats for 10 seconds. Tell children to write the number of



heartbeats their partners counted on the line next to the exercise they did. Have partners take turns doing the exercises so the heart can rest between each activity.

For example: Have half the children do jumping jacks for 30 seconds. Then have the partners of the children who exercised count their heartbeats. Trade roles. Have the partners do jumping jacks for 30 seconds, then have the first group of children count their partners' heartbeats.

6. Have children complete the bar graph on the activity sheet. Tell them to look across the row beside each activity they did and mark the number that matches their number of heartbeats for that activity. Then tell them to color the bar up to that number. Show them the **Heart Rate Example**.

Point out that our hearts work harder when we exercise. Tell children that exercise makes muscles, including the heart muscle, stronger.

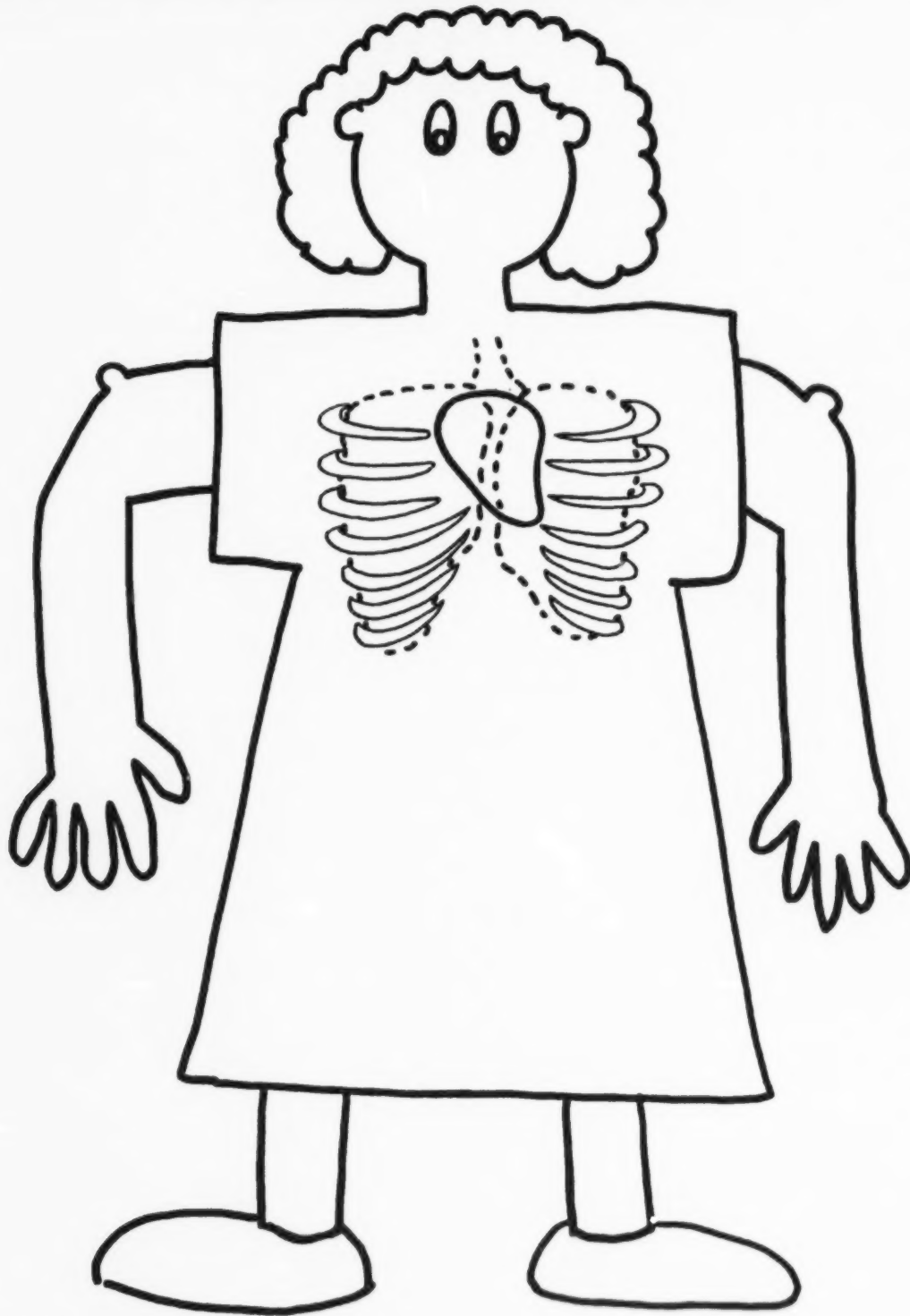
New Words

circulation, involuntary muscle, stethoscope

Where It Fits

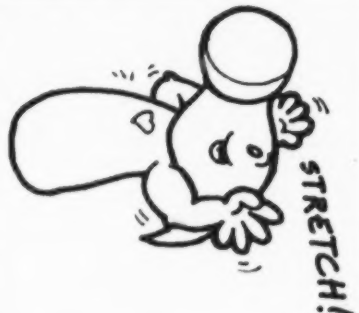
art, health, math, science

Where Is Your Heart?



Heart Rate

How many times did your heart beat?

Activity	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
sitting _____															
walking _____															
hopping _____															
jumping jacks _____															
 STRETCH!															

number of beats per 10 seconds

Heart Rate

Example

How many times did your heart beat?

Activity

sitting <u>8</u>																			
walking <u>12</u>																			
hopping <u>16</u>																			
jumping jacks <u>20</u>																			
 STRETCH!																			
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				

number of beats per 10 seconds

6

Feeding the Body's Cells

Purpose

To explain the different parts (organs) involved in digestion.

In a Nutshell

Children draw or glue pictures of parts of the digestive system on an activity sheet and label them as they watch demonstrations of the functions of some of the digestive organs.

Get Ready, Get Set...

- Gather needed materials: tube of toothpaste, food processor or blender, ball of string, foods for a nutritious breakfast (cereal, fruit, juice, milk), 12-inch square of cheesecloth.
 - Make transparency or poster of **When We Eat**
- Example.**
- Gather materials for children and copy activity sheet for each child.

Materials for Children

- ★ When We Eat activity sheet
- ★ crayons
- ★ scissors
- ★ glue

Here We Go!

1. Tell children that all bodies need food to survive. All the cells in the body need food, but the food must be made very small to get into the cells. The parts of the digestive system help the food we eat get to all the cells in the body.
2. Pass out the **When We Eat** activity sheet. Show children a transparency or poster of the **When We Eat Example** so they can see where the organs should be placed and labeled.

Ask children where they think we start digesting food (mouth). Have children draw the mouth on the activity sheet. Discuss what happens to the food in the mouth. (It gets broken down into smaller bits by the teeth and the tongue. Saliva softens the food.)

3. Now have children draw the esophagus and label it. Tell them the esophagus has a muscle action that pushes the food through it, like a tube of toothpaste. Demonstrate by squeezing a tube of toothpaste. Tell children this squeezing action will happen even if we are standing on our heads.



4. Have children cut out and glue the stomach onto the body and label it. Point out how high on the body the stomach is located.

Use a blender or a food processor to grind up a nutritious breakfast. Talk about how the walls of the stomach move in and out, mashing the food into a thick liquid. Tell children this action isn't very quiet.

Explain that the food processor is doing what our stomachs do. Sometimes the stomach churns even when there isn't much food in it. The muscles in the stomach are involuntary muscles.

5. Have children cut out and glue the small intestine onto the body and label it. Tell them food goes from the stomach into the small intestine. Then it passes into the blood, which takes it to the cells.

To demonstrate how food moves from the small intestine into the blood, pass the blended food through a piece of cheesecloth. Explain that the intestine walls are thin like the cheesecloth.

Tell children the small intestine isn't very small. If it was stretched out straight it would be about 20 feet long. Cut a piece of string 20 feet long. Have children stretch it around the classroom to see how far it goes.

6. Have children cut out and glue the large intestine onto the body and label it. Tell them the large intestine is for waste products, things the body cannot use. Show them the food left in the cheesecloth. Explain that this waste passes out of the body through the rectum.

New Words

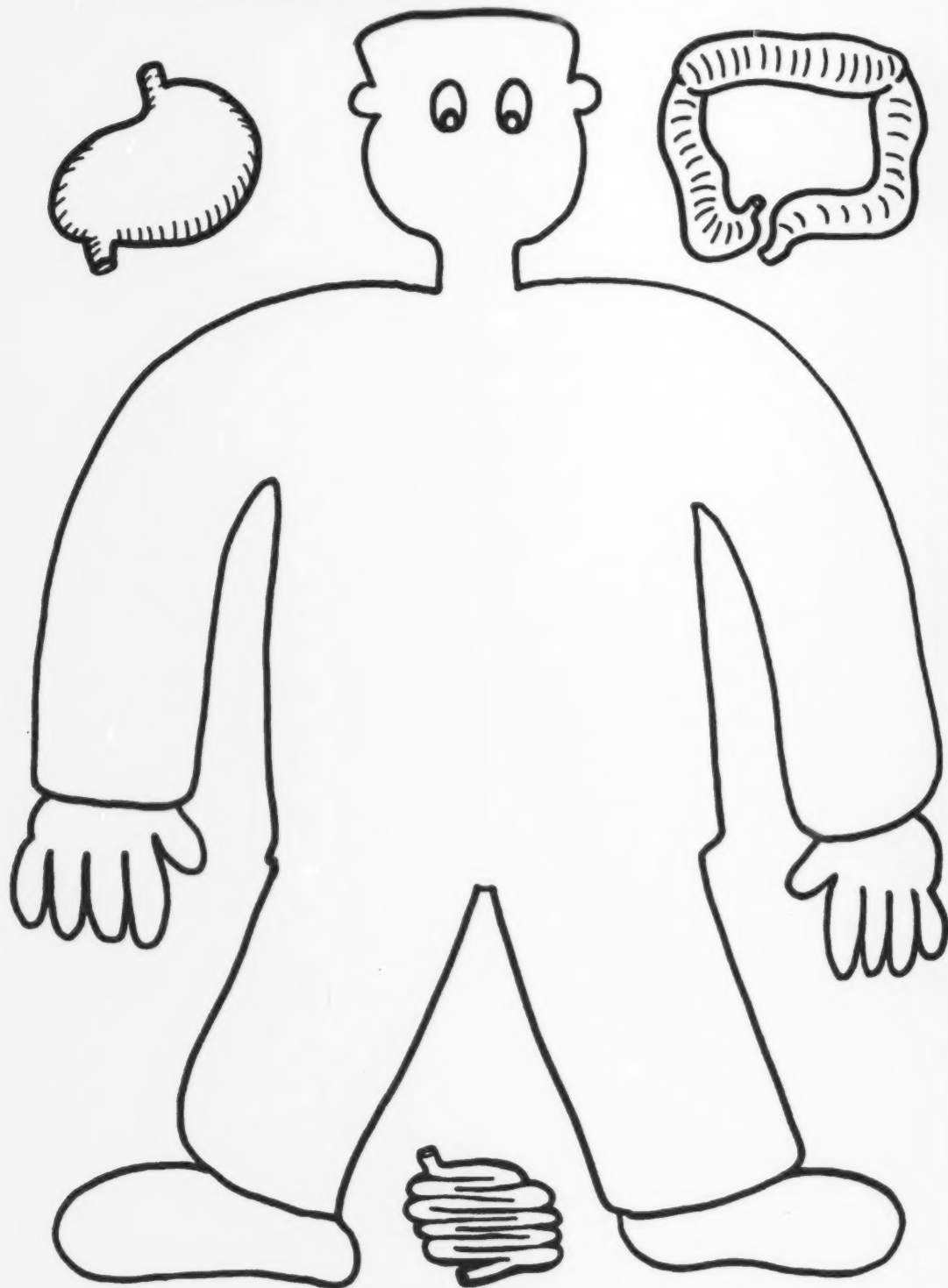
rectum, saliva

Where It Fits

art, health, science

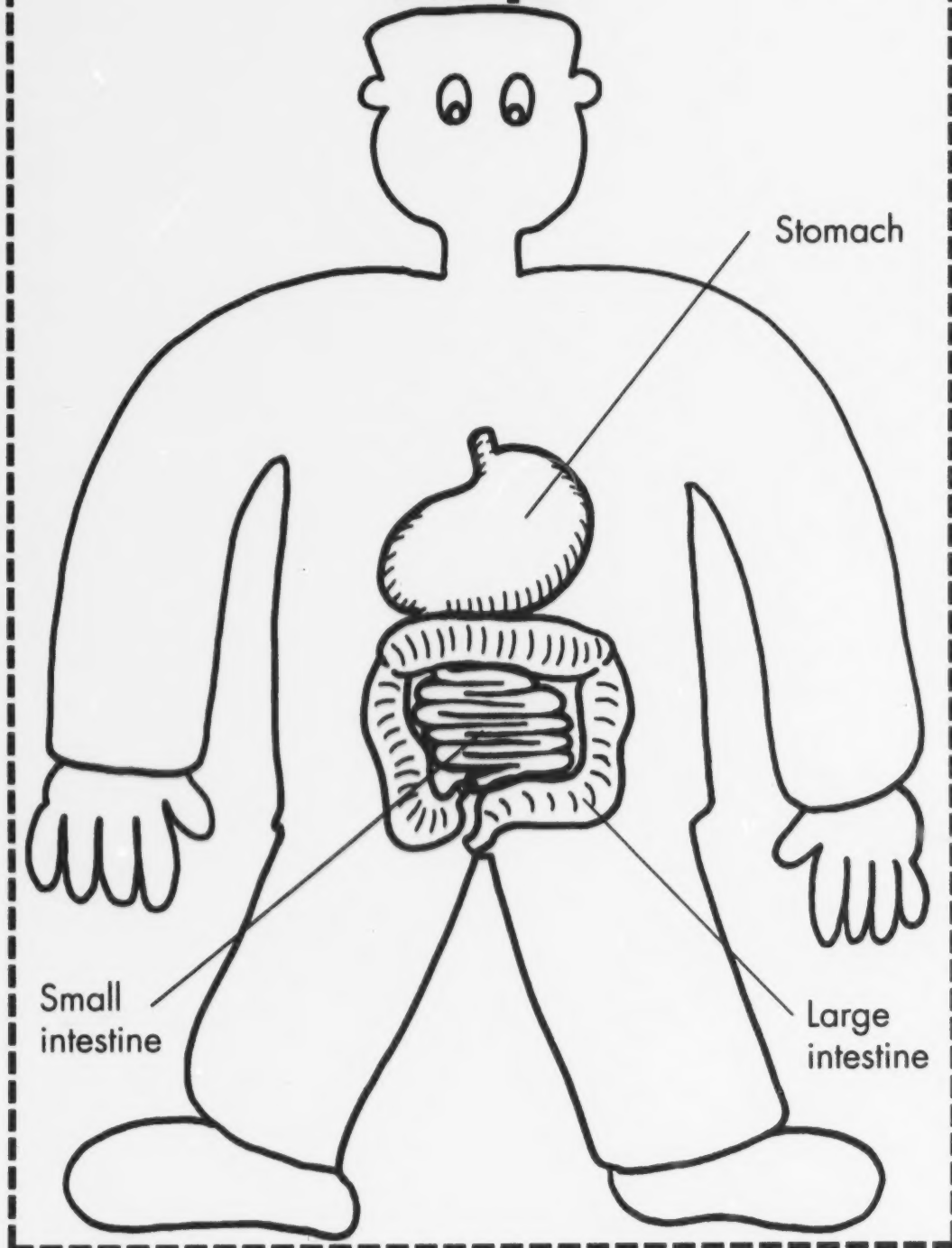


When We Eat



When We Eat

Example



7

The Digestion Story

Purpose

To encourage children to demonstrate their knowledge of the digestive organs.

In a Nutshell

Children make stick puppets of digestive organs and perform plays that show how the body digests food.

Get Ready, Get Set...

- Gather needed materials: hand puppet stage (optional).
- Gather materials for children and make one copy of each activity sheet for each group of four children.

Materials for Children

- ★ Digestive Puppets activity sheets
- ★ tongue depressors, one for each child
- ★ crayons
- ★ glue
- ★ construction paper
- ★ scissors

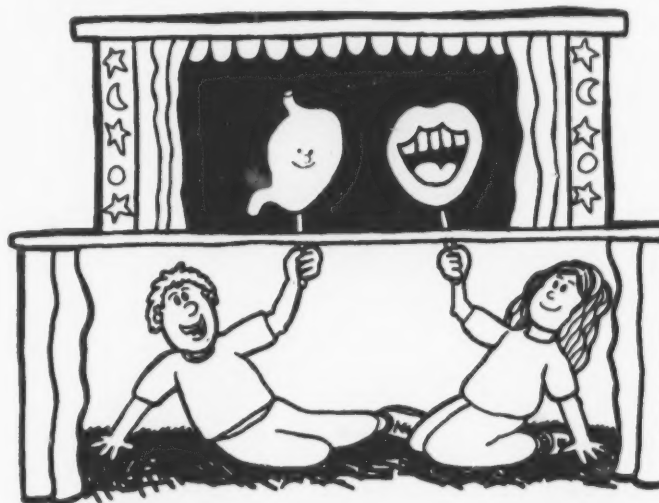
Here We Go!

1. Review with children the digestive body parts and their functions studied in the last lesson.
2. Divide the class into groups of four. Pass out the materials for the stick puppets and the **Digestive Puppets** activity sheets. Tell children to glue the activity sheets to construction paper and cut out the body parts. Tell children to color the body parts and then to glue each body part to a stick to make the puppets.
3. When children have finished the puppets, have groups make up little skits about these body parts (the digestive organs) and how they work. Tell children to start by pretending that someone's eating some food. What happens?

Encourage children to make props to go with their skits. Then have groups present their skits to the class.

Where It Fits

art, drama, health, science



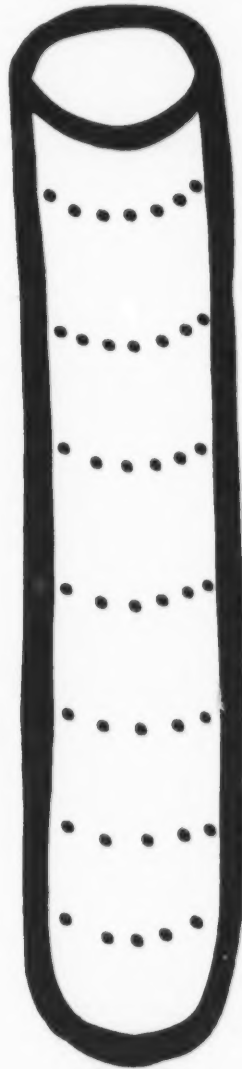
Digestive Puppets

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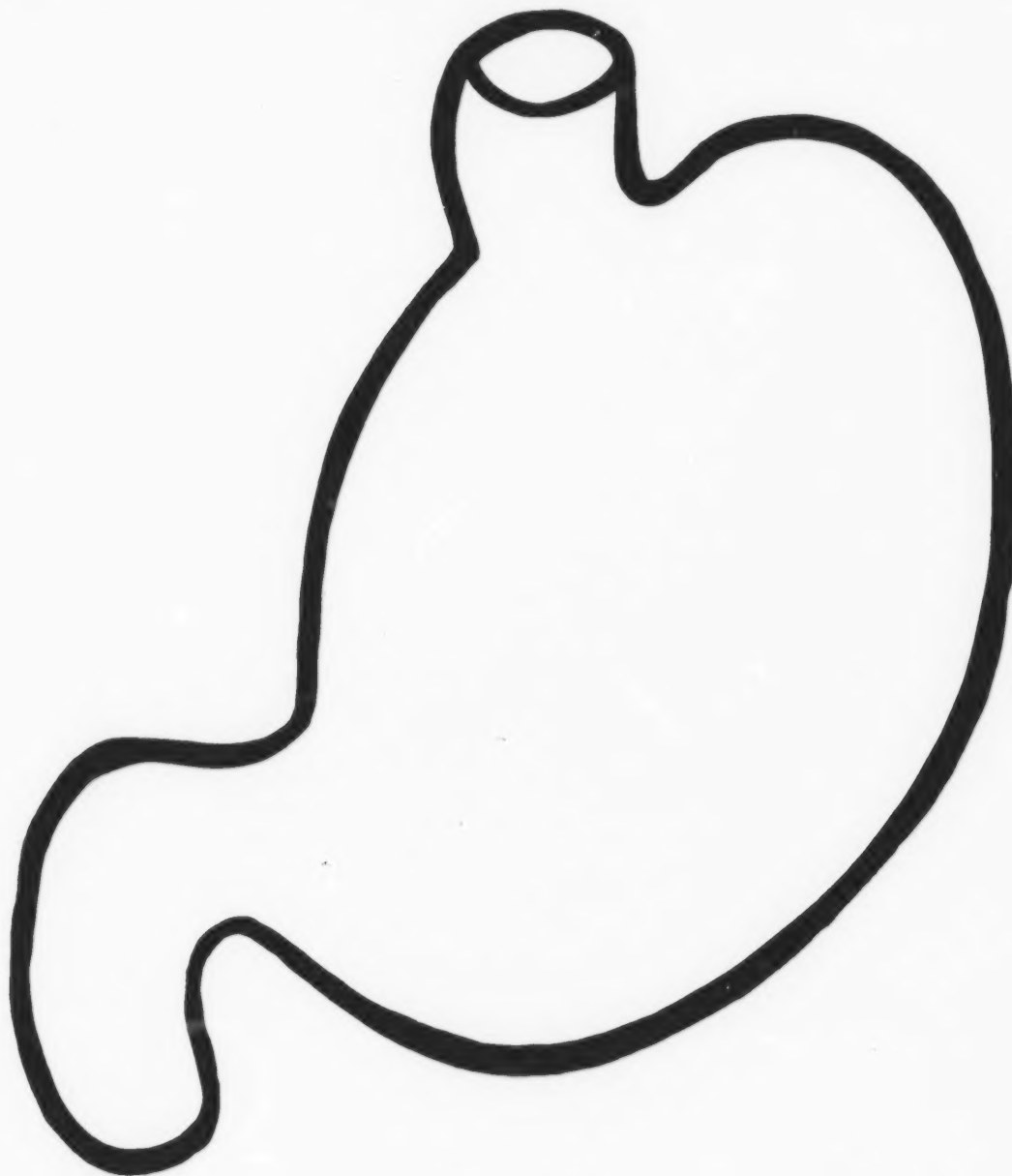
Mouth

Digestive Puppets



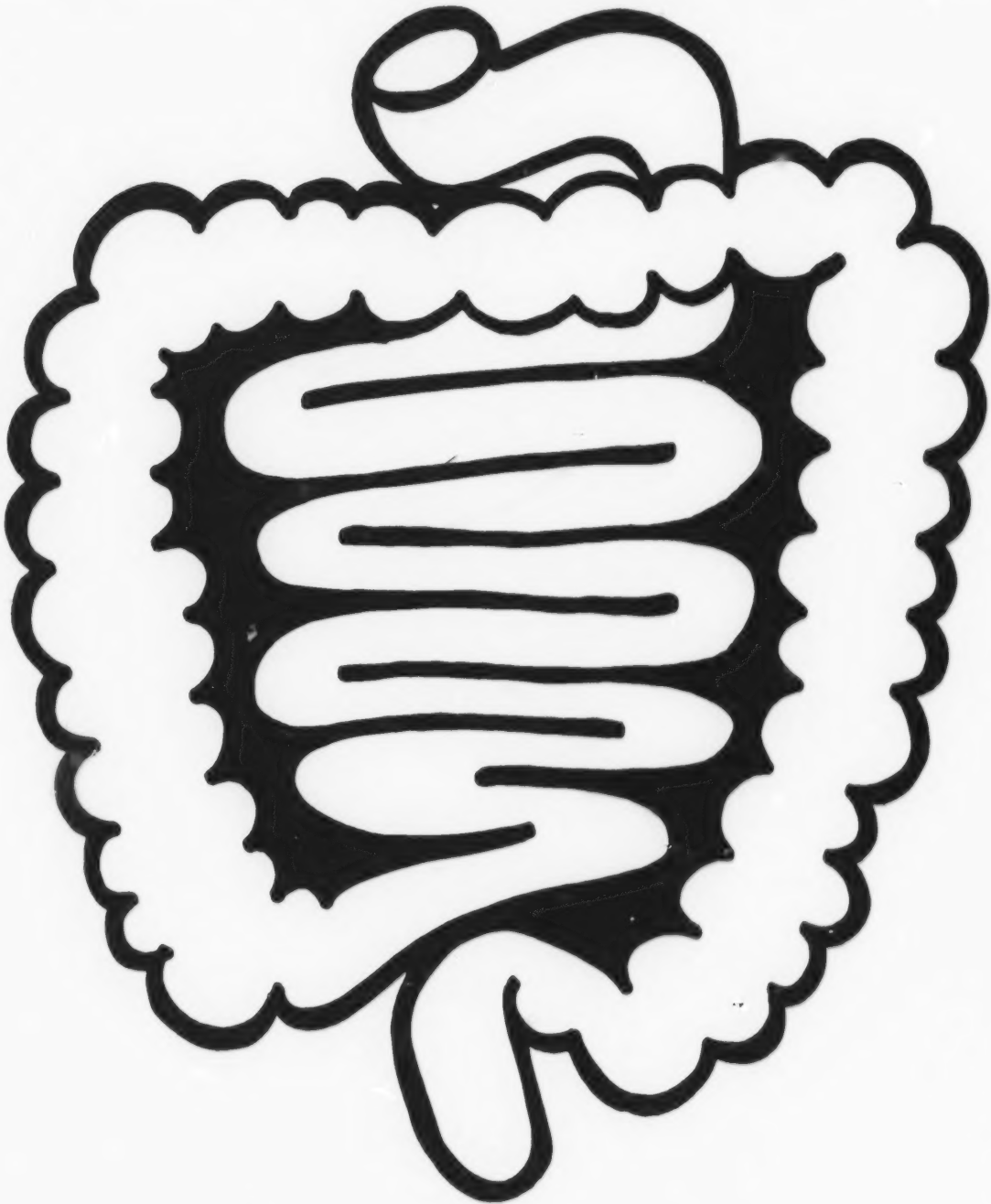
Esophagus

Digestive Puppets



Stomach

Digestive Puppets



Intestines

Purpose

To suggest ways to keep the body and all its cells healthy.

In a Nutshell

Children review the body parts they've studied and discuss activities that help the body stay healthy. They work in groups to make murals that show these activities and share their murals with the class.

Get Ready, Get Set...

- Gather materials for children.

Materials for Children

- ★ butcher paper for group murals
- ★ magazines
- ★ scissors
- ★ crayons
- ★ marking pens
- ★ glue

Here We Go!

1. Review with children the body parts they've been learning about—the heart, voluntary and involuntary muscles, the digestive organs. Remind children that all parts of the body are made of tiny cells.
2. Explain that we can do things to help keep all the body's cells and parts healthy. Tell children that regular exercise (movement), healthy food, clean air and plenty of sleep help us stay healthy.

Divide the class into groups. Tell groups to brainstorm things they can do to keep their bodies healthy.

Tell children to think about what cells need (healthy food, oxygen from clean air). Ask what makes muscles strong (movement, exercise). Tell children that some of the body's important work taking care of cells is done while we're sleeping, so we need to get plenty of rest, too.

3. Pass out butcher paper, magazines and art supplies. Tell children to work with their groups to make a mural that shows ways to help the body and its trillions of cells stay healthy.

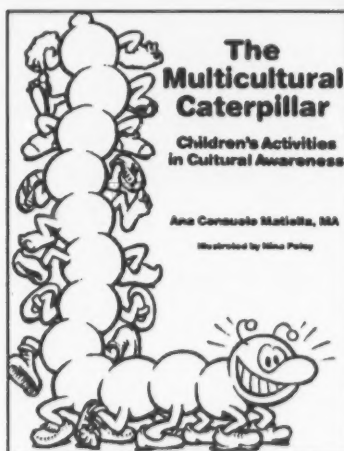
Have groups share their murals with the class. Discuss the variety of healthy activities pictured in the murals.

Where It Fits

art, health, science

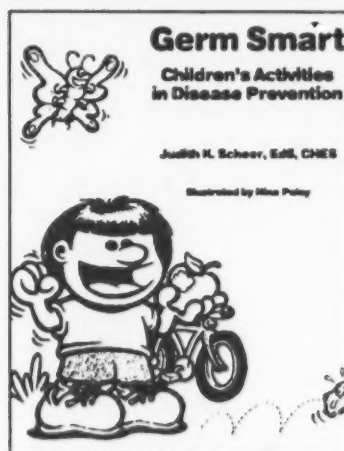


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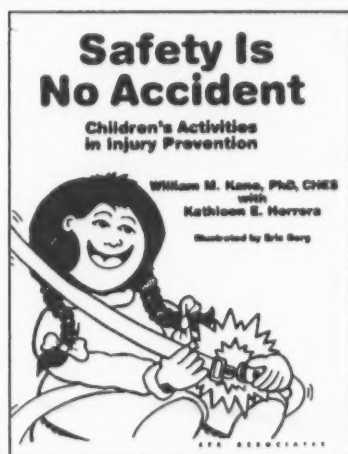
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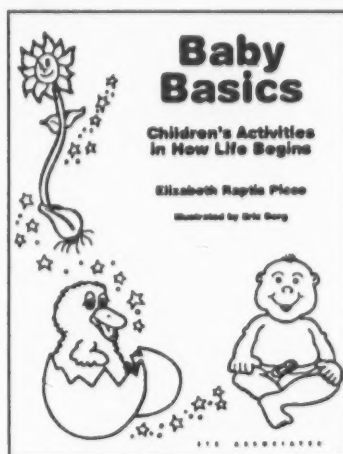
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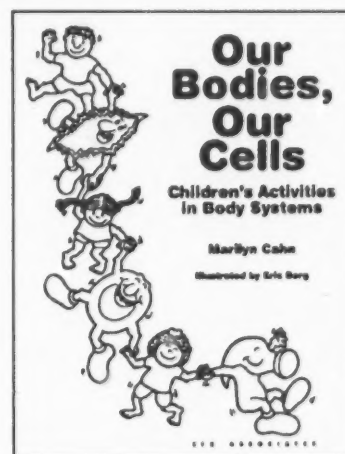
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Help young children make exciting discoveries about the human body with this fun-filled activity book! *Our Bodies, Our Cells* uses a simple analogy between the parts of the body and the parts of a house to make its eight lessons clear and age-appropriate.

Children are introduced to "the smallest part of the body," the cell. Through simple crafts, puppetry and projects they learn basic facts about the systems of the body, laying the foundation for future lessons in health and hygiene. Children learn:

- what cells are and how they function
- how the body systems work together
- how muscles contract and relax
- why the heart is the most important muscle
- what the digestive system does
- how exercise, sleep and nutritious food keep the body healthy

Helpful "Where It Fits" sections make it easy to integrate lessons into art, science, math and other areas of the primary curriculum.

Our Bodies, Our Cells is part of the "Children's Activity Series," which promotes awareness about health, family life and cultural diversity for children in kindergarten through third grade. These supplemental teaching resources provide a variety of concrete, visual activities to help make difficult concepts easy to teach and easy for children to grasp. Other titles in the series include: *The Multicultural Caterpillar*; *You and Me Tobacco Free*; *We Are a Family*; *Germ Smart*; *Safety Is No Accident*; *Baby Basics*; *Masterpiece Me*; and *Caring, Sharing and Getting Along*.

